IN THE CLAIMS:

1. (Thrice Amended) A method for genetic transformation of tomato or melon, said method comprising the steps of:

(a) preparing a silicon carbide fiber solution;

(b) preparing a pollen germination medium;

(c) preparing a DNA solution;

(d) mixing said silicon carbide solution with said pollen germination medium and said DNA solution to form a mixture;

(e) adding fresh pollen into said mixture to form a paste;

(f) vortexing said paste for 30 to 60 seconds, thereby producing a vortexed paste;

(g) applying said vortexed paste on female reproductive plant parts for pollination; and

(h) selection of transformants.

11. (Thrice Amended) The method of Claim 1, wherein the selection of transformants is performed by growing the phenotypic expression of a specific cloned selectable marker gene with a phenotypic expression, said expression being selected from the group consisting of both an antibiotic resistance gene and a herbicide resistance gene, said cloned selectable marker gene selected from the group consisting of an antibiotic resistance gene and a herbicide resistance gene.

31. (Twice Amended) A method for genetic transformation of maize, tomato, or melon reproducing sexually, said method comprising the steps of:

(a) preparing a silicon carbide fiber solution;

(b) preparing a pollen germination medium;

(c) preparing a DNA solution;

(d) mixing said silicon carbide solution with said pollen germination medium and said DNA solution to form a mixture;

(e) adding fresh pollen into said mixture to form a paste;

(f) vortexing said paste for 30 to 60 seconds; thereby producing a vortexed paste

(g) applying said vortexed paste on female reproductive plant parts for pollination; and

(h) selection of transformants.

32. (Twice Amended) The method of Claim 31, wherein said silicon carbide fiber solution used in step (a) are approximately 0.1-20 μm in diameter and 1-250 μm in length.

36 (Amended) The method of Claim 31, wherein said solution of plasmid DNA is dissolved in a Tris EDTA solution.

37. (Thrice Amended) The method of Claim 31, wherein the selection of transformants is performed by growing the phenotypic expression of a specific cloned selectable marker gene with a phenotypic expression, said expression being selected from the group consisting of both an antibiotic resistance gene and a herbicide resistance gene, said cloned selectable marker gene selected from the group consisting of an antibiotic resistance gene and a herbicide resistance gene.